HP Docket No.: 10004092-5

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:		
	Kurt E. Spears	Group Art Unit: To Be Assigned
Serial No.:	To Be Assigned	Examiner: To Be Assigned
Filed:	Herewith	Docket No.: 10004092-5

For: **PHOTOSENSOR ASSEMBLY WITH SHARED STRUCTURES**

PETITION TO MAKE SPECIAL UNDER M.P.E.P. §708.02(VIII)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicants hereby petition the Commissioner of Patents and Trademarks under M.P.E.P. §708.02 (VIII) to make this application special in order to receive accelerated examination. In accordance with M.P.E.P. §708.02 (VIII), Applicant is enclosing a check for $130.00 to cover the fee for this Petition as set forth in 37 C.F.R. §1.17(h). If any additional fee is required in connection with the filing of this Petition, please charge that fee to our Deposit Account No. 08-2025.

The PTO did not receive the following listed Items(s) a check # 130.00 by Sengphat Sandara

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REMARKS

All claims presented for examination are directed to a single invention. However, if the Office determines that all the claims presented are not directed to a single invention, Applicants intend to make an election, without traverse, with respect to that grouping of claims that includes claim 15.

A pre-examination search of patents was conducted in the public search room of the United States Patent and Trademark Office (USPTO) by a professional searcher. The following classifications/sub-classifications were covered during the search: Class 250, subclass 208.1 and class 348, subclasses 272, 275, 294, 297, 298, 299, 302, 303, and 335. Additionally, a computer database search was conducted on the USPTO systems EAST and WEST.

The following references were discovered during the pre-examination search.

U.S. Patent Number	Inventor(s)
US Patent No. 6,320,618	Aoyama
US Patent No. 6,166,831	Boyd, et al.
US Patent No. 6,137,100	Fossum, et al.
US Patent No. 6,009,214	Suggs
US Patent No. 5,973,311	Sauer, et al.
US Patent No. 5,949,483	Fossum, et al.
US Patent No. 5,949,061	Guidash, et al.
US Patent No. 5,926,218	Smith
US Patent No. 5,896,173	Hassler
US Patent No. 5,796,095	Matsuyama, et al.
US Patent No. 5,489,940	Richardson, et al.
US Patent No. 5,267,335	Mita
US Patent No. 5,262,871	Wilder, et al.
US Patent No. 5,151,588	Kiri, et al.
US Patent No. 5,075,770	Smyth
US Patent No. 5,055,921	Usui
US Patent No. 5,020,118	Sugiura
US Patent No. 4,805,006	Yamaguchi, et al.
US Patent No. 4,554,585	Carlson
US Patent No. 4,543,489	Harada, et al.

A copy of each of these references and a form PTO-1449 is submitted herewith.

THE CLAIMED INVENTION

Independent claim 15 recites:

A photosensor assembly comprising:

a first array, a third array and a sixth array of photosensor elements, each photosensor element in the first array, the third array and the sixth array of photosensor elements exhibiting a first size;

a second array, a fourth array and a sixth array of photosensor elements, each photosensor element in the second array, the fourth array and the sixth array of photosensor elements exhibiting a size different than the first size;

the first array and the second array of photosensor elements ***operative to detect a first color of light***, the third array and the fourth array of photosensor elements ***operative to detect a second color of light***, and the fifth array and the sixth array of photosensor elements ***operative to detect a third color of light***;

a first array of charge shift registers coupled between the first array and second array of photosensor elements and operative to receive charges therefrom;

a second array of charge shift registers coupled between the third array and fourth array of photosensor elements and operative to receive charges therefrom; and

a third array of charge shift registers coupled between the fifth array and sixth array of photosensor elements and operative to receive charges therefrom. (Emphasis Added).

As set forth below, Applicants respectfully assert that the invention, as recited in claim 15, patentably defines over the references. More specifically, Applicant respectfully asserts that the references, either individually or in combination, do not teach, disclose, or otherwise render obvious at least the combination of features/elements emphasized above in claim 15.

DETAILED DISCUSSION OF THE REFERENCES

1. *Aoyama* is directed to a semiconductor image sensor with a plurality of different resolution areas. Particularly, if the sensor is designed for monitoring forward views of a vehicle, then the photosensitive portion is divided into . . . a high resolution area in the upper portion . . .and subsequently lower resolution areas in the succeeding lower portions. . . (*see* Abstract).

Applicants respectfully assert that *Aoyama* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Aoyama*, either individually or in combination, for at least the reason that *Aoyama* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

2. *Boyd* is directed to a spatially-offset, row-interpolated image sensor.

Applicants respectfully assert that *Boyd* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Boyd*, either individually or in combination, for at least the reason that *Boyd* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

3. *Fossum* is directed a CMOS image sensor with different pixel sizes for different colors. In particluar, *Fossum* teaches a pixel configuration that includes multiple color sensors of various sizes per pixel.

Applicants respectfully assert that *Fossum* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants

respectfully assert that the claimed invention is patentably distinguishable over *Fossum*, either individually or in combination, for at least the reason that *Fossum* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

4. *Suggs* is directed to a multi-resolution color contact type image sensing apparatus. *Suggs* discloses the use of a first array of photosensor segments with a base resolution is arranged with at least one other array of photosensor segments having a greater than base resolution. Additionally, *Suggs* discloses that each linear array could be operated independently or in conjunction with the other linear arrays to produce multi-resolution resulting images. The resolution could also be manually or automatically selected.

Applicants respectfully assert that *Suggs* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Suggs*, either individually or in combination, for at least the reason that *Suggs* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

5. *Sauer* is directed to a pixel array with high and low resolution modes. The pixel array includes a first signal line and a second signal line, as well as a switch mechanism for coupling the first signal line to the second signal line to switch the resolution between the high and low resolution modes.

Applicants respectfully assert that *Sauer* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Sauer*, either individually

or in combination, for at least the reason that *Sauer* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

6. *Fossum* is directed to an active pixel sensor array with multi-resolution readout. *Fossum* discloses the use of a multi-resolution circuit for processing image signal output from each one of a group of pixel cells forming a contiguous block within an array. The multi-resolution circuit is operable to vary a number of the cells in the contiguous block to produce different output resolutions.

Applicants respectfully assert that *Fossum* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Fossum*, either individually or in combination, for at least the reason that *Fossum* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

7. *Guidash* is directed to an active pixel sensor with switched supply row select. Generally, *Guidash* discloses a pixel architecture for economizing area within the pixel leaving a greater proportion of area for photodetector area.

Applicants respectfully assert that *Guidash* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Guidash*, either individually or in combination, for at least the reason that *Guidash* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

8. *Smith* is directed to an electronic camera with dual resolution sensors. The camera generally includes a low resolution image sensor and a high resolution image sensor with the output signal from the low resolution image sensor being applied to a zoom interpolater, for example, which processes the output signal so that the size of a display image obtained corresponds to a zoom setting of a zoom lens.

Applicants respectfully assert that *Smith* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Smith*, either individually or in combination, for at least the reason that *Smith* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

9. *Hassler* is directed to an image detector for x-ray technology that enables different image resolutions. The different resolutions can be selected by interrogating pixels together or, by the use of voltage impulses of different levels or polarity, can be interrogated separately.

Applicants respectfully assert that *Hassler* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Hassler*, either individually or in combination, for at least the reason that *Hassler* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

10. *Matsuyama* is directed to an optical apparatus that includes area sensors which are made to differ in picture element pitch between the central portions and the margin portions.

Applicants respectfully assert that *Matsuyama* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Matsuyama*, either individually or in combination, for at least the reason that *Matsuyama* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

11. *Richardson* is directed to an electronic imaging system and sensor for correcting distortion in wide angle lens.

Applicants respectfully assert that *Richardson* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Richardson*, either individually or in combination, for at least the reason that *Richardson* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

12. *Mita* is directed to a multi-resolution image scanner. The scanner includes first, second, and third one-dimensional image sensors, with the second image sensor exhibiting a higher resolution than the first and third sensors. Electrical image output signals from the first and third low resolution image sensors are added and any high frequency components in the added signal are removed by a low pass filter for producing signal data relating to the mean brightness of the region around a pixel of interest. The difference between the mean brightness and the brightness of the pixel of interest, as outputted by the second high resolution image sensor, is then derived to produce and output signal in which points to where the brightness changes in the image are emphasized.

Applicants respectfully assert that *Mita* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Mita*, either individually or in combination, for at least the reason that *Mita* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

13. *Wilder* is directed to a multiple-resolution image sensor that includes an array of photo elements and a device for randomly addressing individual pixels. A device for selectively varying the number of pixels that can be read out on any one read cycle also is included.

Applicants respectfully assert that *Wilder* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Wilder*, either individually or in combination, for at least the reason that *Wilder* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

14. *Kiri* discloses a radiation imaging apparatus that includes x-ray detecting elements that exhibit different areas.

Applicants respectfully assert that *Kiri* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Kiri*, either individually or in combination, for at least the reason that *Kiri* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

15. *Smyth* is directed to a color-balanced image detector for producing multi-color images. The imaging sensor includes detector assembly sensitive to specific colors, with the number of detector elements being varied in accordance with the color sensed to provide for greater integration of low intensity portion of the spectrum.

Applicants respectfully assert that *Smyth* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Smyth*, either individually or in combination, for at least the reason that *Smyth* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

16. *Usui* is directed to a color-reading line sensor that includes sensor arrays formed of sensor elements. The sensor arrays are aligned in the direction normal to a sensor array direction and the size of a particular color sensor element in a direction normal to the sensor array direction is set to be larger than that of the other color sensor elements in the same direction.

Applicants respectfully assert that *Usui* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Usui*, either individually or in combination, for at least the reason that *Usui* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

17. *Sugiura* is directed to an image-reading apparatus that includes a first line sensor and a second line sensor that includes larger photoelectric converting elements than the first line sensor.

Applicants respectfully assert that *Sugiura* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Sugiura*, either individually or in combination, for at least the reason that *Sugiura* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

18. *Yamaguchi* is directed to a light-receiving element that is formed of a plurality of light receiving cells arranged to maintain light-receiving efficiency without causing optical loss at any one of them.

Applicants respectfully assert that *Yamaguchi* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Yamaguchi*, either individually or in combination, for at least the reason that *Yamaguchi* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

19. *Carlson* is directed to a spatial pre-filter for variable resolution sampled imaging systems. The pre-filter employs a diffusing surface variably spaced from an imager so that greater blurring in low resolution regions of the imager can be produced.

Applicants respectfully assert that *Carlson* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Carlson*, either individually or in combination, for at least the reason that *Carlson* fails to either

anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

20. *Harada* is directed to a solid state image sensor with particularized arrangements of cells.

Applicants respectfully assert that *Harada* does not teach, disclose or otherwise render obvious the invention as defined by the pending claims. In particular, Applicants respectfully assert that the claimed invention is patentably distinguishable over *Harada*, either individually or in combination, for at least the reason that *Harada* fails to either anticipate or render obvious the features/elements of the photosensor assembly emphasized above in claim 15.

DEPENDENT CLAIMS

Based on the foregoing, Applicants respectfully assert that independent claim 15 is in condition for allowance. If independent claim 15 is deemed allowable over the prior art of record, then its dependent claims 16 - 28 are allowable as a matter of law, because these dependent claims contain all features/elements of their respective independent claim. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Additionally and notwithstanding the foregoing reasons for the allowability of claim 15-28, dependent claims 16-28 recite further features and/or combinations of features (as is apparent by examination of the claims themselves) that are patentably distinct from the prior art disclosed in the pre-examination search. Hence, there are other reasons why these dependent claims are allowable.

CONCLUSION

Applicants respectfully submit that in view of the foregoing, the requirements of M.P.E.P §708.02 (VIII) have been met. It is respectfully asserted that the pending claims are all allowable over the references presented either individually or in any reasonable combination. Accordingly, Applicants respectfully request that this Petition to Make Special be granted and that claims 15-28 of this application be placed in condition for allowance.

Respectfully submitted,

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